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16 December 1953

MEMORANDUM FOR: THE RECORD

SUBJECT: Meeting with _____
 P-58, P-608, P-102, P-103, P-109, P-93, P-139

1. Time and Place of Meeting: December 1 and 2, 1953, at _____

2. Attendance: _____

3. Purpose: To discuss the status and progress of the subject projects, to concentrate on specific problems of the contractor which needed special attention, and to introduce _____ to the contractor and the projects of which he is to take charge.

4. Discussion:

a. General:

1. _____ accompanied _____ on this trip since he is now serving in the capacity of Chief, General Physics Branch, and will henceforth be responsible for the projects being carried out at _____

2. The general subject of security was discussed. It was pointed out that the people from _____ who are cleared and normally come to Washington on business should be completely briefed as to who they are working for. They include _____

_____ should be so informed as soon as his clearances come through. _____ submitted two copies of a list of the personnel in their personnel staff which will be filed in the contractor's file. _____ will submit PHS's on all personnel who are in a position to accumulate a knowledge of the complete scope of our work with _____ in order that they might be cleared through TS.

b. Night Landing System/

b. Night Landing System, Ultraviolet, P-60B:

1. [] prepared a list of questions referring to the proposal for work to be done on the source in response to his questions, he was informed that APD would contact General Electric and Air Force and provide him with as much information as is available from previous tests run and installations made. The proposal for work to be done on the source is currently in the hands of APD. In addition, he is to prepare a proposal which will include the cost of a cap on the lens of the autocollimator, a tripod stand to hold and set the angle of the autocollimator in operations. The tripod stand will contain a bubble level. 7

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2. [] reported on the sources and filters which they now have on hand. They have 100, 225, and 400 watt sources, each with its own filter system. The 100 watt system has an effective u.v. output of about 0.6 watt, the 225 about 4.9 watts output, and the 400 about 4.6 watts output. The 400 watt source, with its reflector is about 20 inches in diameter - much too large for practical aircraft installation. It is felt that more looking should be done for more adequate sources. It is hoped that such information will be available at G.E. or Air Force (ARCS).

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3. [] exhibited a variety of phosphors which he has collected, one of which is to replace the deteriorated phosphor on the target of the present unit. The phosphor of the original autocollimators have evidently changed in color and did not have as good a response as the new phosphors. [] suggested that color photographs be taken of the deteriorated phosphor to show to []. From what was seen the unit should be improved somewhat by a change in phosphor.

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4. [] gave a night demonstration, using the 100 watt u.v. source with autocollimators placed at distances of 1000, 1200 and 3000 feet. The first two were visible strong and clear, the third (3000) was barely distinguishable. The brightness attenuated rapidly when the viewer moved a few feet from the source. The horizontal beam width of the autocollimator is 58° and the vertical beam width 44°.

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5. Financial Status Report:

Total appropriation	\$13,200.00
Expenditures thru 11/21/53	<u>9,834.86</u>
Balance	3,365.14

The first phase of this project expired 1 October 1953. A proposal for the next phase involving \$5400.00 more has been forwarded to APD and is currently being processed as a supplement to the former task.

c. P-93, Communication System, Electromagnetic, VLF, Ground Waves:

1. A proposal has been submitted to TSS/APD on this project; it is currently being given consideration as a formal task.

d. P-102, Transducers, Indexing and Cataloging and P-103, Control Systems, Indexing and Cataloging:

1. It became obvious in these discussions that the present project titles are misnomers and that the work at [] is actually being done under the labels of "Transducers" and "Actuators". It is therefore proposed that Project No. 102 retain its present title and that P-103 become "Actuators, Indexing and Cataloging". It was mentioned that, at the conclusion of these tasks, another called control systems, involving the possible combinations of transducers and actuators, be initiated. [] has defined these terms in the following manner:

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- a. Transducer - A device which provides an electrical signal on the basis of some energy input.
- b. Actuator - A device which performs some function as a result of an electrical input.

2. Transducers:

[] submitted a list of questions the answers to which did provide the information necessary for his project engineers to properly do the job of indexing and cataloging transducers. These questions are particularly concerned with the factors involved in a figure of merit. TSS/APD will forward the answers to these questions by mail. The following report on the status of funds in the transducer project was submitted..

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Financial Status Report:

Total appropriation	\$43,142.00
Expenditures thru 11/21/53	8,754.82
Balance	34,387.18

The project will end March, 1955.

b. It was agreed that [] would investigate a better quality of cards for the indexing system which would better withstand handling. TSS/APD will investigate the number of sets of the index which should be provided by the contractor.

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3. Actuators:

a. [] submitted a list of questions which he needs to properly evaluate their efforts to date in involving an indexing system suitable to our needs. These questions involve the limiting characteristics which must be applied to the various types and classes of actuators. For example, individual relays are too numerous to list separately in the index, consequently, one set of limiting characteristics should be supplied to index what types of relays should be indexed; a lower limit of characteristics should be provided to specify the relays which should be indexed individually.

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b. It was pointed out that there would probably be a requirement for the continuing compilation of types and classes of transducers beyond the scope of present task. This will be discussed later. The list of questions on both transducers and actuators together with the T36/APD answers are filed in the P-102 and P-103 project files.

c. The following are the types and classes of actuators on which limiting characteristics are required:

<u>Types</u>	<u>Classes</u>
Indicator	Acoustical
Motor	Chemical
Relay	Electrical
Solenoid	Hydraulic
Transformer	Pneumatic
Vacuum Type	Magnetic
	Mechanical
	Optical
	Thermal

e. P-109, Microphone, Fluid Contact:

1. [] submitted a list of questions entitled "Transducer Program" to which APD supplied answers and forwarded them by mail. Questions and answers are filed in the subject project file.

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2. It was agreed that [] should test various types of microphones for their application to vibration pick-up. These are to provide standards for comparison with the fluid contact microphones. Along this line APD will send two BA-110 and two Dynalab microphones and one metal detector to use in this program.

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3. [] exhibited and demonstrated a test rig for testing and evaluating microphones. It is felt that such a rig might be installed in our facilities.

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4. Financial Status Report:

Total appropriation	\$16,324.00
Expenditures thru 11/21/53	<u>14,465.40</u>
Balance	1,858.60

This financial report indicates that there is only enough money to permit one more month's work on this project which is scheduled to end on 16 March 1954. Since the work which will end approximately one month hence fulfills the original work specified, it was agreed that this work will be considered Phase A and additional work to be done will be considered Phase B. [redacted] is preparing a proposal for the work to be done under Phase B. Because of the short time limit involved the proposal should have expedient handling by APD as soon as it arrives.

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f. P-139, Decoder, Flying Spot, [redacted]

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1. [redacted] submitted a proposal to APD approximately one month ago. A memorandum has been sent to the requesting division asking for a classification and reiteration of their requirement. A clear statement of APD intention will be forwarded to [redacted] as soon as possible.

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[redacted]
TSS/APD

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Distribution:

Orig. - P-58
1 - P-608
✓ 1 - P-103
1 - P-102
1 - P-109
1 - P-93
1 - P-139
1 - Chrono

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